

## COASTAL CONSERVANCY

Staff Recommendation  
January 29, 2015

### **INCORPORATING CLIMATE SMART ADAPTIVE STRATEGIES FOR WETLANDS RECOVERY IN SOUTHERN CALIFORNIA**

Project No. 97-001-03  
Project Manager: Megan Cooper

**RECOMMENDED ACTION:** Authorization to accept a grant from the Landscape Conservation Cooperative program of the U.S. Fish and Wildlife Service and to disburse up to \$200,000 to the Southern California Coastal Water Research Project for the development of sea-level rise adaptation strategies and a decision-support tool to support restoration and management of tidal wetlands in Southern California, counties of San Diego, Orange, Los Angeles, Ventura, and Santa Barbara.

**LOCATION:** Coastal wetlands and watersheds from Point Conception in Santa Barbara County south to the international border with Mexico (Exhibit 1).

**PROGRAM CATEGORY:** Resource Enhancement

---

#### **EXHIBITS**

Exhibit 1: [Project Location – WRP Region and Current Projects](#)

Exhibit 2: [Landscape Conservation Cooperative Grant Proposal](#)

Exhibit 3: [Project Letters](#)

---

#### **RESOLUTION AND FINDINGS:**

Staff recommends that the State Coastal Conservancy adopt the following resolution pursuant to Sections 31104, 31111, 31113 and 31251-31270 of the Public Resources Code:

“The State Coastal Conservancy hereby authorizes the acceptance of a grant from the U.S. Fish and Wildlife Service, Landscape Conservation Cooperative program, and disbursement of up to two hundred thousand dollars (\$200,000) to the Southern California Coastal Water Research Project (“SCCWRP”) to be used for developing sea-level rise adaptation strategies and a decision-support tool for restoration and management of tidal wetlands in Southern California. Prior to the disbursement of funds, SCCWRP shall submit for the review and written approval of the Conservancy’s Executive Officer a work program, including budget and schedule, and any contractors to be employed for these work program tasks.”

Staff further recommends that the Conservancy adopt the following findings:

“Based on the accompanying staff report and attached exhibits, the State Coastal Conservancy hereby finds that:

1. The proposed authorization is consistent with Chapter 3 of Division 21 of the Public Resources Code, regarding receipt of federal funds, funding feasibility studies and plans and addressing impacts of climate change, and with Chapter 6 of Division 21 of the Public Resources Code, regarding resource enhancement.
  2. The proposed project is consistent with the current Conservancy Project Selection Criteria and Guidelines.”
- 

### **PROJECT SUMMARY:**

Staff recommends that the Conservancy accept a grant from the Landscape Conservation Cooperative program of the U.S. Fish and Wildlife Service and authorize the disbursement of up to \$200,000 to the Southern California Coastal Water Research Project (“SCCWRP”) for the “Climate-Smart Adaptive Strategies for Wetlands Recovery in Coastal Southern California Project” (“project”). This project will develop sea-level rise adaptation strategies and a decision-support tool to support restoration and management of tidal wetlands in Southern California. The Conservancy received a grant from the Landscape Conservation Cooperative (“LCC”) program of the U.S. Fish and Wildlife Service in October, in the amount of \$157,622 to undertake this work (see Exhibit 2). It was awarded to the Conservancy on behalf of an interdisciplinary team consisting of SCCWRP, the Tijuana River National Estuarine Research Reserve (“TRNERR”), the University of California, Los Angeles (“UCLA”) and the U.S. Geological Survey (“USGS”). Conservancy staff will work closely with those partners on the project.

Climate change science has evolved rapidly over the past decade. Most coastal areas of the United States have been modeled and assessed for potential sea-level rise effects on infrastructure, and in some cases, on threats to natural resources along the coast. Coastal wetland managers universally acknowledge the need to account for sea-level rise and other climate change effects in decisions about restoration, management, and monitoring. Southern California has received substantial study due to the concentrated development in the coastal zone, density of distinct coastal wetlands, and desire to protect and restore those wetlands for both ecological and social functions. Southern California has a unique advantage of having structured agreements in place through the Southern California Wetlands Recovery Project (“WRP”) among federal, state, and local wetland managers on cooperative assessment and restoration prioritization.

Despite the existence of high quality scientific information, there are significant barriers to the application of available climate change tools to real-world decisions regarding how to best restore and manage coastal wetlands. These barriers derive from the difficulty in determining the most appropriate restoration or management prescription in light of site-specific habitat

conditions, constraints, and expected future conditions. Wetlands within the WRP region (see Site Description below) vary widely in terms of their size, habitat composition, and physical processes. This in turn affects habitat composition and influences appropriate management actions. This heterogeneity along the coast combined with the variety of infrastructure constraints and other anthropogenic stressors makes it difficult for managers to know which tools to use and how to best apply them to inform restoration and management for their specific circumstance.

Specific tasks for this project will include defining contemporary wetland archetypes, developing a matrix of climate change tools applicable to wetland archetypes in Southern California and sample outputs from selected tools, and completing a decision-support tool. Meetings with the project team and the Science Advisory Panel (“SAP”) of the WRP, held approximately quarterly, will be the vehicle for review, input and collaboration on the project deliverables described below.

The first step in the project will be to define major coastal archetypes based on wetland setting, form, and composition. The archetype development will provide a list of coastal wetland archetypes with additional information on hydrology and related functions and other issues that may affect management decisions. Existing models and tools will be coupled with specific archetypes. The climate change tools will be summarized through a matrix of existing climate change tools and the applicability of relevant tools for use in Southern California coastal wetlands. The grantee will focus on the tools and models related to changes in hydrology due to sea-level rise, as these will be the most influential drivers affecting tidal wetlands.

Next, the sea level rise tools will help develop archetype-specific vulnerabilities (exposure and sensitivity) of different wetland types. The identified vulnerabilities will inform the next step, which is to develop adaptive strategies for wetland archetypes. Key tools will be applied at selected sites to assist in identifying vulnerabilities to sea level rise. With an understanding of the vulnerabilities of wetland ecosystems, the grantee will then develop climate-smart adaptation strategies. These adaptive strategies will provide management/ restoration actions by archetype throughout the region, which will be developed into a decision-support tool to help resource managers and restoration practitioners guide restoration project prioritization and design. The vulnerabilities and adaptation strategies will lead into a decision-support tool consisting of flowcharts, matrices, and sea-level rise tool profiles that will provide resource managers with climate-smart guidance for site-specific decisions on wetland management and restoration projects. The adaptation strategies and the decision-support tool developed through this project will become part of the WRP’s updated *Regional Strategy*. The *Regional Strategy* will provide local partners, resource and regulatory agencies, and funders with regional goals for wetland restoration and tools for making decisions about project planning and funding.

The SCCWRP, a joint powers agency formed among Southern California water dischargers and regulators (including five member agencies of the WRP), is an appropriate partner for this project because it is a recognized leader in wetland research and maintains a multi-disciplinary scientific and technical staff. SCCWRP’s mission is “(t)o contribute to the scientific understanding of linkages among human activities, natural events, and the health of the southern California coastal environment, communicate this understanding to decision makers and other stakeholders, and recommend strategies for protecting the ocean environment for this and future

generations.” SCCWRP has been a member of the SAP for 15 years, has been involved with developing much of the data that will be used in the project, and is integrally linked to the development of the updated *Regional Strategy*. SCCWRP will contract with UCLA, the TRNERR and The National Audubon Society (represented by John Takekawa, formerly with USGS at the time of the grant proposal) for certain portions of the work as identified by the project team.

**Site Description:** The project area is the tidal wetlands within the WRP region, which consists of the coastal watersheds within the counties of San Diego, Orange, Los Angeles, Ventura, and Santa Barbara. The region spans from Point Conception south to the U.S./Mexico border (see Exhibit 1).

**Project History:** The WRP is a broad-based partnership, chaired by the Resources Agency and staffed by the Conservancy. Members include public agencies, non-profits, scientists, and local communities working cooperatively to acquire and restore rivers, streams, and wetlands in coastal Southern California. In 2001, the WRP published its *Regional Strategy*, which is the guidance document that explains that WRP’s restoration, conservation and scientific goals. The *Regional Strategy* needs to be updated to reflect new data and information and contemporary approaches to ecological restoration. Incorporating an understanding of how climate change will impact our approach to restoration is a primary impetus for updating the *Regional Strategy*.

The Conservancy has provided financial, technical and in-kind staff support to the WRP since its inception in 1997. The typology of wetland archetypes that will form the basis of this project were developed through a grant from the Conservancy to the San Francisco Estuary Institute in May 2007. The sea level rise model that will form the basis of the vulnerability assessments will be the Coastal Storm Model System (CoSMoS) for Southern California that was funded by the Conservancy in April 2013. In October 2014 the Conservancy and SCCWRP were awarded a joint grant from the LCC to develop adaptation strategies for Southern California’s tidal wetlands and create decision-support tools to apply those strategies to on-the-ground restoration projects.

## PROJECT FINANCING

<b>Coastal Conservancy Funds</b>	<b>\$80,000</b>
Landscape Conservation Cooperative Grant to Conservancy (U.S. Fish and Wildlife)	<u><b>\$120,000</b></u>
<b>Project Total</b>	<b>\$200,000</b>

The expected source of Conservancy funds for this project is an appropriation to the Conservancy from the Safe Drinking Water, Water Quality and Supply, Flood Control, River and Coastal Protection Bond Act of 2006 (Proposition 84, Public Resources Code sections 75001 *et seq.*). Proposition 84 allows for the utilization of funds for expenditures pursuant to Division 21

of the Public Resources Code, as specified in Section 75060(b). Pursuant to Section 75060(b), funds may be allocated to the improvement and protection of coastal and marine water quality and habitats, so long as the project is compliant with Division 21 of the Public Resource Code.

The U.S. Fish and Wildlife Service funds come from an LCC grant to the Conservancy. SCCWRP is identified as the scientific lead on the grant. The total grant to the Conservancy from the LCC is \$157,622, which is 67% of the total project cost, providing substantial leverage for the Conservancy's funds. Support for Conservancy staff from the LCC grant will be \$37,622.

#### **CONSISTENCY WITH CONSERVANCY'S ENABLING LEGISLATION:**

The proposed project would be undertaken pursuant to Chapter 3 of the Conservancy's enabling legislation, Public Resource Code, Sections 31104, 31111, and 31113, and Chapter 6 Sections 31251-31270.

Section 31104 authorizes the Conservancy to apply for and accept federal grants. The USFW's Landscape Conservation Cooperative grant is a federal grant.

Section 31111 permits the Conservancy to award grants to public agencies for the purpose of funding and undertaking plans and feasibility studies.

Section 31113 permits the Conservancy to address the impacts and potential impacts of climate change on resources within its jurisdiction. Pursuant to this authorization, the proposed project will address sea level rise and potential other coastal hazards that could impact coastal communities and natural resources.

Consistent with Section 31251 of the Public Resources Code, the proposed project would award a grant to a public agency to undertake activities necessary for the enhancement of the natural resources of Southern California, which has been impacted by indiscriminate dredging and filling, improper location of improvements, human-induced events, and incompatible land uses and has suffered the loss of natural and scenic values. The proposed project is intended to assist the Conservancy in meeting its purposes and objectives under this section by increasing the feasibility, cost-effectiveness, and persistence of wetland restoration and enhancement projects in Southern California's coastal zone and coastal watersheds. SCCWRP's work on this project, in support of the WRP, will help to develop sea level rise adaptation strategies needed to carry out successful coastal resource enhancement projects. SCCWRP is a joint powers agency within the meaning of Public Resources Code Section 31010 and Government Code Sections 6500 *et seq.*, which may enter into an agreement with the Conservancy to carry out the recommended authorization.

Section 31253 permits the Conservancy to provide up to the total cost of any coastal resource enhancement project, consistent with established project eligibility and priority factors. In determining the amount of Conservancy funding for this project, the factors identified in Section 31253 have been considered and applied, as described in detail below, under the heading "Consistency With Conservancy's Project Selection Criteria & Guidelines".

**CONSISTENCY WITH CONSERVANCY'S 2013 STRATEGIC PLAN GOAL(S) & OBJECTIVE(S):**

Consistent with **Goal 5, Objective A** of the Conservancy's 2013-2018 Strategic Plan, the proposed project will inform the update of the WRP's *Regional Strategy*. The *Regional Strategy* is the planning document used by the WRP to prioritize and select various restoration, conservation, and preservation efforts throughout southern California's wetland habitats. The proposed project and the resultant *Regional Strategy* will help local project proponents plan more successful projects by incorporating sea level rise adaptation measures.

Consistent with **Goal 7, Objective A**, the proposed project is a coordinated effort with several agencies and institutions to identify significant climate-related threats and adaptation strategies for tidal wetlands, which will lead to more resilient coastal resources. The WRP members have all identified the need to incorporate SLR adaptation into their restoration planning efforts. The proposed project will identify areas vulnerable to SLR, develop various adaptation strategies, and provide a tool for wetland managers to guide restoration prioritization and design.

Consistent with **Goal 7, Objective C**, the proposed project will conduct a regional vulnerability assessment of coastal wetlands as well as develop adaptation plans to address predicted climate change impacts to natural resources, biodiversity, and critical habitat.

**CONSISTENCY WITH CONSERVANCY'S PROJECT SELECTION CRITERIA & GUIDELINES:**

The proposed project is consistent with the Conservancy's Project Selection Criteria and Guidelines, last updated on October 2, 2014, in the following respects:

**Required Criteria**

1. **Promotion of the Conservancy's statutory programs and purposes:** See the "Consistency with Conservancy's Enabling Legislation" section above.
2. **Consistency with purposes of the funding source:** See the "Project Financing" section above.
3. **Promotion and implementation of state plans and policies:** The proposed project is consistent with the following state plans and policies promoting global climate change resilience and adaptation:
  - a. The *Regional Strategy* of the Southern California Wetlands Recovery Project (WRP, 2001) is currently utilized in planning and implementing coastal wetland restoration in Southern California and this update will incorporate resilience and future climate conditions into this on-going effort;
  - b. The project implements *California @ 50 Million: The Environmental Goals and Policy Report* (Governor's Office of Planning and Research, 2013 Draft) includes a goal to "Build Climate Resilience into All Policies" by building resiliency and considering future climate conditions into ongoing planning efforts;

- c. The proposed project will directly respond to the Governor's Executive Order S-13-08 instructing all state agencies to plan and consider a range of sea level rise (SLR) scenarios for the years 2050 and 2100 in order to assess project vulnerability and, to the extent feasible, reduce expected risks and increase resiliency to sea level rise for all projects in areas of sea-level rise risk;
  - d. This proposed project also aligns with the goals listed in the *CA Climate Adaptation Strategy/Safeguarding California: Reducing Climate Risk Plan* (CA Natural Resources Agency, July 2014) in terms of improving management practices for coastal and ocean ecosystems and resources by including climate adaption strategies;
  - e. Finally, the proposed project was identified as a priority in the State's 2014 Wetland Program Plan, a collaborative plan with the Department of Fish and Wildlife, the State Water Resources Control Board, and the Delta Conservancy.
4. **Support of the public:** The WRP has enjoyed the support of the general public for many years due to efforts in public outreach via the County Task Forces. The Task Forces provide a county-wide forum for public, private, and non-profit wetlands and watershed stakeholders to help implement feasible projects, mobilize support for funding, channel community concerns to the WRP member agencies, and promote wetlands education and information-gathering. The Conservancy and SCCWRP grant application to the LCC also received support from UCLA and the State Water Resources Control Board. See Exhibit 3 for support letters.
5. **Location:** The proposed project would be located within the coastal zone throughout the Southern California region. This project will benefit the coastal resources in Southern California by providing scientifically-sound information on the impacts of SLR, which is needed to develop and manage coastal restoration projects that will persist in future climatic conditions.
6. **Need:** While the funding for this project is mostly funds from a federal grant from the Landscape Conservation Cooperative to the Conservancy, SCCWRP is the agency with the technical expertise to carry out the project's defined tasks. The Conservancy and SCCWRP developed this project collaboratively, at the Conservancy's direction, and SCCWRP does not have other funding to complete this work.
7. **Greater-than-local interest:** By definition, the WRP is a regional partnership of agencies committed to promote and implement coastal restoration. By updating the WRP's *Regional Strategy*, projects across the region will be able to coordinate and learn from one another, ultimately facilitating more consistency in the restoration and management practices of Southern California's coastal resources.
8. **Sea level rise vulnerability:** Tidal wetlands in Southern California are highly vulnerable to sea level rise because of their location on the coast and their inability to migrate inland due to infrastructure and development constraints. This project is consistent with Executive Order S-13-08 by developing a method for managers to assess sea level rise projections for the years of 2050 and 2100 at specific wetland locations with the most appropriate tools to develop restoration and management priorities.

**Additional Criteria**

9. **Urgency:** The proposed project is urgent as threats of SLR continue to increase in California's coastal zones. Managers need methods now in order to successfully manage and restore coastal resources. If scientifically-sound methods are not developed in time, coastal systems in Southern California may face habitat conversion to mudflats or open water systems. In addition, many coastal restoration projects are on-going and may currently lack necessary sea-level rise resiliency strategies. Providing these strategies as early as possible in the planning and implementation phases of restoration will facilitate eventual incorporation.
10. **Leverage:** See the "Project Financing" section above.
12. **Innovation:** While several other projects have assessed the threats of sea level rise to coastal infrastructure, the effects of sea level rise to specific coastal habitat processes have not been addressed at a regional-scale in Southern California. This project will not only identify current and future habitat vulnerabilities across the region, but it will also develop novel adaptation strategies for future coastal restoration projects.
13. **Readiness:** The project team and scope of work was developed when the grant was awarded to the Conservancy in October 2014. The project team is ready to begin working on specific tasks as soon as the funding is granted to SCCWRP.
14. **Realization of prior Conservancy goals:** "See "Project History" above
16. **Cooperation:** The WRP is a cooperative effort between 18 state and federal agency partners. In addition, this project is a collaborative effort between scientists, a non-profit organization and the Conservancy.
17. **Vulnerability from climate change impacts other than sea level rise:** This project will focus on SLR vulnerabilities; however, the project team realizes the potential for other climate change impacts to confound SLR impacts and in such cases those other impacts will be incorporated into the vulnerability assessments.

**CONSISTENCY WITH LOCAL COASTAL PROGRAM POLICIES:**

The California Coastal Commission and Ocean Protection Council are currently undertaking a large effort to support local governments in planning for sea-level rise and climate change, and developing new or updating existing Local Coastal Programs ("LCP"), consistent with the California Coastal Act. In Southern California, many cities and counties are currently updating their LCPs to incorporate climate change effects including the cities of Goleta, Santa Barbara, Los Angeles, Hermosa Beach, San Clemente, Ventura, Oxnard, Santa Monica, Newport Beach, Carlsbad, Encinitas, Del Mar, and Solana Beach and the counties of Santa Barbara and San Diego. This project aligns with all of the on-going LCP updates in the Southern California region as it will identify SLR vulnerabilities in the various coastal zones.



**COMPLIANCE WITH CEQA:**

The proposed project is categorically exempt from review under the California Environmental Quality Act (CEQA) pursuant to 14 Cal. Code of Regulations Section 15306 Class 6, which consists of “basic data collection, research, experimental management, and resource evaluation activities which do not result in a serious or major disturbance to an environmental resource.”

The proposed project will collect data on existing SLR tools, apply those tools, and then develop novel adaptation strategies. These efforts will not have the possibility of a physical environmental effect; the proposed project is solely gathering information. Upon approval, staff will file a Notice of Exemption for the project.